

REMARKS

I. Introductory Comments

Claims 16, 17, and 19-36 are pending in the application and stand rejected by the Examiner. Claims 16, 30, and 31 are independent claims, and each has been amended. Dependent claims 29 and 33 have also been amended to correct minor informalities. Therefore, Claims 16-17, and 19-36 remain pending in the application. All claim amendments are fully supported in the specification, and no new matter has been added by way of the amendments. Although Applicants believe that the claims were patentable over the cited references, Applicants have nonetheless amended the independent claims to facilitate prosecution.

In the Final Office Action, the Examiner rejected claims 16, 19, and 26 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,688,384 (Hodgson). The Examiner also rejected claims 16, 19, and 26 under 35 U.S.C. §103(a) as being unpatentable over the combination of Hodgson and U.S. Patent No. 5,203,397 (Bandyopadhyay). The Examiner rejected claims 16, 19, and 27-30 under 35 U.S.C. §103(a) as being unpatentable over the combination of Hodgson and U.S. Patent No. 6,210,549 (Tharp). The Examiner also rejected claim 17 under 30 under 35 U.S.C. §103(a) as being unpatentable over the combination of Hodgson, Tharp, and JP2002161387 (Oka). The Examiner rejected claims 20, 21, 24, 25, 31, 32, 35, and 36 under 35 U.S.C. §103(a) as being unpatentable over the combination of Hodgson, Tharp, and U.S. Patent No. 4,354,916 (Pohto). Lastly, the Examiner rejected claims 22, 23, 33, and 34 under 35 U.S.C. §103(a) as being unpatentable over the combination of Hodgson, Tharp, Pohto, and U.S. Patent No. 4,544,078 (Arenas).

Applicants respectfully request favorable reconsideration of the presently pending claims in view of the amendments and the following remarks. Further, Applicants believe that there are also reasons other than those set forth below why the pending claims are patentable, and reserve the right to set forth those reasons, and to argue for the patentability of claims not explicitly addressed herein, in future papers. Also, for any instance where the Examiner took Official Notice, Applicants expressly do not acquiesce to the taking of Official Notice, and respectfully

request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03.

II. Independent Claim 16 Is Patentable Over Hodgson.

To anticipate a claim, the reference must teach every element of the claim. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The Examiner alleged that independent claim 16 was anticipated by Hodgson. Although Applicants disagree with the Examiner that Hodgson anticipates any of Applicants’ claims, claim 16 has nonetheless been amended to facilitate prosecution. Hodgson neither teaches nor suggests each and every recitation of claim 16, as discussed below by way of several examples.

A. “*a skirt wall structure having a top plate, said top plate having an aperture, said anode connection member passing through said aperture*”

Claim 16 recites “a skirt wall structure having a top plate, said top plate having an aperture, said anode connection member passing through said aperture.” The Examiner alleged that Hodgson teaches this recitation by referencing “a skirt wall structure [22] having a top plate [24] which has an aperture through which the anode connection member passes.” (Final Office Action, page 2.) However, Hodgson fails to teach or suggest “a skirt wall structure having a top plate, said top plate having an aperture,” as recited in claim 16.

Specifically, Hodgson discloses “[a]n electrically neutral skirt member 22 . . . depends from the plate 18 and also extends upwardly therefrom to a flange member 24. (Hodgson: col. 6, lines 44-47.) Hodgson’s flange member 24 is simply not a “top plate,” as recited in claim 16. While Hodgson’s lid 26 is potentially analogous to Applicants’ “top plate,” Hodgson specifically notes that “there is no through-hole provided in the lid member 26.” (Hodgson: col. 7, lines 1-2.) Hodgson discloses that there is no through-hole because “stud-fires and stud-leaks” are problems that can arise from “cells hav[ing] their anode hangers passing through the cell lid.” (Hodgson: col. 1, lines 49-51.)

Claim 16 also recites that “said anode connection member pass[es] through said aperture.” However, Hodgson teaches that “an anode connector stud 50” is welded to “the outer surface of the lid member.” (Hodgson: col. 6, line 67 – col. 7, line 2.) Hodgson clearly fails to teach or suggest that “said anode connection member pass[es] through said aperture [of said top plate].” Thus, there can be no question that Hodgson fails to teach the required aperture of claim 16 through the top plate of the skirt wall structure. Not only does Hodgson fail to teach “said anode connection member passing through said aperture,” but Hodgson actually teaches away from this recitation by teaching that the anode connection member is welded to the underside of the lid member 26.

Additionally, the Examiner notes on page 3 that “Hodgson et al discloses that the anode connection member [42] may be connected to closure member [26] by welding,” and that “[t]his arrangement does not require a through-hole in the closure member [26].” (Final Office Action, page 3.) However, claim 16 specifically recites that “said top plate [has] an aperture,” and that “said anode connection member pass[es] through said aperture.” It appears that the Examiner is recognizing that Hodgson fails to teach that “said top plate [has] an aperture,” as recited in claim 16.

B. “a skirt wall top plate closure member”

Hodgson fails to teach or suggest “a skirt wall top plate closure member” (emphasis added). While Hodgson’s lid 26 is potentially analogous to Applicants’ “top plate,” Hodgson’s lid 26 has no separate “closure member,” as recited in claim 16.

C. “a skirt wall top plate closure member being in sealing engagement with said skirt wall top plate, said skirt wall top plate closure member being in electrical communication with said anode connection member to constitute an anode connection to said fluorine electrolytic cell”

Notably, without disclosing “a skirt wall top plate closure member,” Hodgson cannot teach or suggest that the “closure member [is] in sealing engagement with said skirt wall top plate,” or that the “closure member [is] in electrical communication with said anode connection member,” as recited in claim 16.

D. “a non-conductive spacer member being sealingly disposed between said skirt wall top plate closure member and an outer surface of said skirt wall top plate”

Claim 16 also recites “a non-conductive spacer member being sealingly disposed between said skirt wall top plate closure member and an outer surface of said skirt wall top plate.” However, since Hodgson fails to teach or suggest a “skirt wall top plate closure member,” Hodgson cannot teach or suggest “a non-conductive spacer member being sealingly disposed between said skirt wall top plate closure member and said skirt wall top plate,” as recited in claim 16.

E. “wherein said end portion of said anode connection member is retained by said skirt wall top plate closure member”

Independent claim 16 has been amended, and now recites “wherein said end portion of said anode connection member is retained by said skirt wall top plate closure member.” (emphasis added.) The Examiner alleged that Hodgson teaches that “the end portion of the anode connection member is disposed ‘within’ the skirt wall top plate closure member.” Specifically, the Examiner alleged:

Hodgson et al discloses that the anode connection member [42] may be connected to closure member [26] by welding (column 6, lines 58-59). This arrangement does not require a through-hole in the closure member [26]. See column 7, lines 1-2. The lack of a through-hole would eliminate a potential source of leakage. The welding would have been expected to have caused some degree of interdiffusion between connection member [42] and closure member [26] which would result in the end of the connection member being “within” the closure member. (Final Office Action, page 3.)

As the Examiner notes, Hodgson teaches welding “an anode connector stud 50” to “the outer surface of the lid member.” (Hodgson: col. 6, line 67 – col. 7, line 2.) The Examiner alleges that welding causes “some degree of interdiffusion . . . which would result in the end of the connection member being ‘within’ the closure member.” (Final Office Action, page 3.) However, Hodgson says nothing at all about interdiffusion. Thus, the Examiner cited Bandyopadhyay and alleged that “Bandyopadhyay teaches [] welding with interdiffusion.” (Final Office Action, page 4.) However, Bandyopadhyay is non-analogous art, and is clearly not directed to the recitations found in Applicants’ claims, as discussed in more detail below.

Applicants disagree with the Examiner's interpretation of the term "within," but have nonetheless amended claim 16 to clarify and facilitate prosecution. Thus, claim 16 now recites that the "anode connection member is retained by said skirt wall top plate closure member." Welding an anode connector stud to the outer surface of the lid member is simply not the same as the "anode connection member passing through said aperture [of the top plate of the skirt wall structure]." Further, without disclosing that the anode connection member passes through an aperture, and without disclosing a top plate closure member, Hodgson cannot teach or suggest that an "end portion of said anode connection member is retained by said skirt wall top plate closure member," as recited in claim 16.

F. *"said end portion of said anode connection member being spaced apart from said skirt wall top plate and said aperture by said spacer member and said skirt wall top plate closure member"*

Independent claim 16 has been amended, and now recites "said end portion of said anode connection member being spaced apart from said skirt wall top plate and said aperture by said spacer member and said skirt wall top plate closure member." Neither Hodgson, nor any of the other cited references, whether alone or in combination, teach or suggest that an "end portion of said anode connection member [is] spaced apart from said skirt wall top plate and said aperture by said spacer member and said skirt wall top plate closure member," as now recited in independent claim 16.

Therefore, for at least the foregoing reasons, claim 16, as well as claims 17, and 19-29 depending therefrom, are patentable over Hodgson. Thus, claims 16, 17, and 19-29 are in condition for allowance, and Applicants respectfully request that the Examiner withdraw the rejections of these claims.

III. Obviousness Under Section 103(a)

Claims 16, 17, and 19-36 are pending in the application and were rejected under Section 103(a) as being allegedly unpatentable over the combination of Hodgson and at least one other cited reference. Section 2143.01 of the MPEP states:

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts. Where the teachings of two or more prior art references conflict, the examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference might accurately discredit another.

In re Young, 927 F.2d 588, 18 USPQ2d 1089 (Fed. Cir. 1991) (Emphasis added). In *KSR International Co. v. Teleflex, Inc.*, 550 U.S. ___, (April 30, 2007), the Supreme Court stated that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 12. Additionally the Court stated that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.* at 15. The Court further explained that:

What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under §103. One of the ways in which a patent’s subject matter can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent’s claims.

Id. at 16. Accordingly, the Court made clear that “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known and in the prior art.” *Id.* at 14.

In summary, KSR does not disturb the well-settled proposition that a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would teach away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984); MPEP § 2141.02. Further, the USPTO has published Section 103 Examination Guidelines providing seven rationales for claim

rejections as examples of applications of *KSR* under Section 103, consistent with this requirement of *Gore*. *See Section 103 Examination Guidelines*, 72 F.R. 57526 (October 10, 2007).

A. Independent Claim 16 Is Patentable Over Hodgson Combined with Bandyopadhyay.

The Examiner rejected claims 16, 19, and 26 under Section 103(a) as being unpatentable over the combination of Hodgson and Bandyopadhyay. Notably, Bandyopadhyay is directed to a “heating assembly for a die-casting machine.” (Bandyopadhyay: Title.) In addition, Bandyopadhyay states that “[m]y present invention relates to . . . an apparatus for heating the material stream between the die caster and the die cavities or sprue of a die-casting die, especially for the die casting of zinc and magnesium.” (Bandyopadhyay: Col. 1, lines 6-11.)

Bandyopadhyay is completely unrelated to the recitations found in claims 16, 19, and 26. The Examiner alleged that both Hodgson and Bandyopadhyay “face[] the problem of joining parts in aggressive operating conditions (corrosive fluorine, and Bandyopadhyay teaches that welding with interdiffusion addresses this problem.” (Final Office Action, page 4.) However, the Examiner has failed to allege that Applicants and Bandyopadhyay faced a similar problem. The Bandyopadhyay reference appears to be chosen by the Examiner on the basis of complete hindsight. Applicants are unable to discern any connection between the recitations in claim 16 and the disclosure of Bandyopadhyay.

As stated in MPEP Section 2141.01(a), “any need or problem known in the field of endeavor at the time of the invention and addressed by the patent [or application at issue] can provide a reason for combining the elements in the manner claimed. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1397 (2007).” Bandyopadhyay is non-analogous art because it is not directed or related to any problem addressed by Applicants' claims. Notably, Applicants make no mention of “welding” in any claim. As previously noted, the Examiner failed to even allege that Bandyopadhyay and Applicants face a similar problem, but merely noted that Hodgson teaches welding, and Bandyopadhyay teaches interdiffusion welding.

- i. *"suspending said anode connection member from a skirt wall top plate closure member and sealing said aperture with said skirt wall top plate closure member by providing at least one non-electrically conductive spacer member therebetween"*

Hodgson fails to teach or suggest "a skirt wall top plate closure member" (emphasis added). In addition, Tharp fails to teach or suggest "suspending said anode connection member from a skirt wall top plate closure member and sealing said aperture with said skirt wall top plate closure member by providing at least one non-electrically conductive spacer member therebetween," as recited in claim 30.

- ii. *"wherein an end portion of said anode connection member is retained by said skirt wall top plate closure member"*

Independent claim 30 has been amended, and now recites "wherein an end portion of said anode connection member is retained by said skirt wall top plate closure member." (emphasis added.) As previously discussed regarding claim 16, Hodgson fails to teach or suggest that "an end portion of said anode connection member is retained by said skirt wall top plate closure member." In addition, Tharp also fails to teach or suggest that "an end portion of said anode connection member is retained by said skirt wall top plate closure member," as now recited in claim 30.

- iii. *"wherein said end portion of said anode connection member is spaced apart from said skirt wall top plate and said aperture by said at least one spacer member and said skirt wall top plate closure member"*

Independent claim 30 has been amended, and now recites "wherein said end portion of said anode connection member is spaced apart from said skirt wall top plate and said aperture by said at least one spacer member and said skirt wall top plate closure member." As previously discussed regarding claim 16, Hodgson fails to teach or suggest this recitation. In addition, Tharp also fails to teach or suggest that "said end portion of said anode connection member is spaced apart from said skirt wall top plate and said aperture by said at least one spacer member and said skirt wall top plate closure member," as now recited in claim 30.

Therefore, for at least the foregoing reasons, claim 30 is patentable over Hodgson and Tharp, whether viewed alone or in combination. Thus, claim 30 is in condition for allowance, and Applicants respectfully request that the Examiner withdraw the rejection of claim 30.

Even if Bandyopadhyay were analogous art, Bandyopadhyay has no bearing on the recitations of Applicants' claims. Applicants make no mention of "welding," and Applicants' claims are clearly not even related to the field of die-casting. Clearly, Bandyopadhyay fails to teach or suggest any of the recitations found in independent claim 16.

Therefore, for at least the foregoing reasons, claim 16, as well as claims 17, and 19-29 depending therefrom, are patentable over Hodgson and Bandyopadhyay, whether viewed alone or in combination. Thus, claims 16, 17, and 19-29 are in condition for allowance, and Applicants respectfully request that the Examiner withdraw the rejections of these claims.

B. Independent Claim 30 Is Patentable Over The Combination of Hodgson and Tharp.

The Examiner rejected claims 16, 19, and 27-30 under Section 103(a) as being unpatentable over the combination of Hodgson and Tharp. The Examiner summarily rejected claim 30 by stating: "Claim 30 is directed to a method rather than an apparatus, but recites limitations similar to those of claim 16." (Final Office Action, page 6.) However, claim 30 is clearly not identical to claim 16. Further, the Examiner did not allege that Hodgson anticipates claim 30, but rather alleged that claim 30 is unpatentable over the combination of Hodgson and Tharp. Therefore, without more explanation, the Examiner has failed to establish a *prima facie* case of obviousness and should withdraw this rejection of claim 30.

Although Applicants disagree with the Examiner that claim 30 was unpatentable over the combination of Hodgson and Tharp, claim 30 has nonetheless been amended to facilitate prosecution. Neither Hodgson nor Tharp, whether viewed alone or in combination, teach or suggest each and every recitation of claim 30, as discussed below by way of several examples.

C. Independent Claim 31 Is Patentable Over The Combination of Hodgson, Tharp, and Pohto.

The Examiner rejected claims 20, 21, 24, 25, 31, 32, 35, and 36 under Section 103(a) as being unpatentable over the combination of Hodgson, Tharp, and Pohto. Although Applicants disagree with the Examiner that claim 31 was unpatentable over the combination of Hodgson, Tharp, and Pohto, claim 31 has nonetheless been amended to facilitate prosecution. Hodgson, Tharp, and Pohto, whether viewed alone or in combination, fail to teach or suggest each and every recitation of claim 31, as discussed below by way of several examples.

- i. *“a skirt wall top plate closure member being in sealing engagement with said skirt wall top plate, said skirt wall top plate closure member being in electrical communication with said anode connection member”*

As previously discussed regarding claim 16, Hodgson fails to teach or suggest “a skirt wall top plate closure member” (emphasis added). In addition, neither Tharp nor Pohto teach or suggest “a skirt wall top plate closure member being in sealing engagement with said skirt wall top plate, said skirt wall top plate closure member being in electrical communication with said anode connection member,” as recited in claim 31.

- ii. *“wherein an end portion of said anode connection member is retained by said skirt wall top plate closure member,*

Independent claim 31 has been amended, and now recites “wherein an end portion of said anode connection member is retained by said skirt wall top plate closure member.” (emphasis added.) As previously discussed regarding claim 16, Hodgson fails to teach or suggest that “an end portion of said anode connection member is retained by said skirt wall top plate closure member.” In addition, neither Tharp nor Pohto teach or suggest that “an end portion of said anode connection member is retained by said skirt wall top plate closure member,” as now recited in claim 31.

iii. *“said end portion of said anode connection member being spaced apart from said skirt wall top plate and said aperture by said spacer member and said skirt wall top plate closure member”*

Independent claim 31 has been amended, and now recites “said end portion of said anode connection member being spaced apart from said skirt wall top plate and said aperture by said spacer member and said skirt wall top plate closure member.” As previously discussed regarding claim 16, Hodgson fails to teach or suggest this recitation. In addition, neither Tharp nor Pohto teach or suggest that “said end portion of said anode connection member being spaced apart from said skirt wall top plate and said aperture by said spacer member and said skirt wall top plate closure member,” as now recited in claim 31.

Therefore, for at least the foregoing reasons, claim 31 is patentable over Hodgson, Tharp, and Pohto, whether viewed alone or in combination. Thus, claim 31, as well as claims 32-36 that depend therefrom, are in condition for allowance, and Applicants respectfully request that the Examiner withdraw the rejections of claims 31-36.

CONCLUSION

All rejections have been addressed. In view of the above, the presently pending claims are believed to be in condition for allowance. Accordingly, reconsideration and allowance are respectfully requested and the Examiner is respectfully requested to pass this application to issue.

It is believed that any fees associated with the filing of this paper are identified in an accompanying transmittal. However, if any additional fees are required, they may be charged to Deposit Account 18-0013, under order number 66221-0035. To the extent necessary, a petition for extension of time under 37 C.F.R. 1.136(a) is hereby made, the fee for which should be charged against the aforementioned account.

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